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Teaching geoscience in prison

Standfirst: *There are thousands of potential students desperate to learn behind bars, but few resources for scientific education. The Think Like A Scientist program offers prisoners a chance to learn geoscience.*

Education is key to helping people in prison succeed after they are released. However, due to restrictive prison environments, a lack of funding for prison educational programs, and some prisoners' previous struggles with traditional classroom settings, teaching in prison is a complex endeavour. Subjects are also biased towards the humanities and criminology. Yet with the prevalence of popular press stories on climate change, natural disasters, and space missions, there is a strong demand from the prison population to learn more about our planet.

In 2019, I started a prison-based science course called 'Think Like A Scientist'. In this program, people in prisons in the North East of England learn about a different science topic each week and analyse the current research in the field. The material focusses on impactful geoscience topics, including earthquake hazards and fundamentals of anthropogenic warming, allowing the students to feel connected to the world through learning about the wonders of Earth.

The seven-week course is designed to improve critical thinking and encourage independent thought for people in prison. The restrictive environment means Think Like A Scientist is most often taught using a flip chart and paper handouts. This 'back to basics' approach focusses on dialogue and exploration of what the students *do not know* about a topic, and the classroom environment permits, and even expects, failure in the pursuit of knowledge. The teaching methodology increases confidence in education, which hopefully acts as a pathway to further education programs on the student's rehabilitation journey. Moreover, through offering opinions on societally-relevant topics such as climate change, the students are given a voice in society. The inclusive classroom environment will hopefully foster a sense of community to the outside world.

As academics, we are being increasingly asked to spread our scientific message, with most grant applications now requesting a section on how your research and/or time is going to be beneficial to the wider community. In prisons, students want to be taught and the individual impact can be high: "the course has given me more confidence and made me understand and see the world and universe around me in a different light", commented one alumnus of the course anonymously, highlighting the importance of science programs behind bars.

From its inception, the course, benefited by its simple setup, has been designed to be easily transferable to teaching environments beyond prison, promoting learning in non-traditional classrooms. Indeed, if we can inspire people in prison to pursue STEM education through learning about earthquakes, volcanoes, and greenhouse gases via pen and paper, we can apply our work to disadvantaged schools, adult learning facilities, refugee camps, and beyond. There

is a demand to learn about geoscience and there needs to be a community response to bridge the chasm between research and outreach.

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Back to basics course pack for 'Think Like A Scientist'.

